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| EXAMINER |
|---|
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| ART UNIT | PAPER NUMBER |
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| 1614 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/719,946 | Applicant(s) JOMAA, HASSAN | |
|---|---|---|---|
| | Examiner Brian S Kwon | Art Unit 1614 | |

*-- The MAILING DATE of this communication appears on the cover sh et with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 July 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *15-20, 22-38 and 40-51* is/are pending in the application.

4a) Of the above claim(s) *22-38 and 40-51* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Status of Application*

1. The request filed on March 12, 2002 for a Request for Continued Examination (RCE) under 37 CFR 1.114 is accepted and a RCE has been established. An action on the RCE follows.

2. Acknowledgment is made of applicant's filing of change of address on June 24, 2002.

3. By amendment filed July 15, 2002, claims 21 and 39 have been cancelled and claims 15-18, 22-25, 29-30, 33, 35, 38, 40, 44-45 and 47 have been amended. Claims 15-20, 22-38 and 40-51 are currently pending.

### *Election/Restrictions Acknowledged*

4. Acknowledgment is made of applicant's election of Group I invention. Claims 22-38 and 40-51 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Although claim 21 was originally included in Group I invention, applicants have cancelled claim 21. Therefore, claims 15-20 are pending for the examination.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 15-17 are rejected under 35 USC 112, first paragraph, because the specification while being enabling for the specific autoantigen (e.g., nervous system tissue extracts, islet cell

extracts, liver extracts, adrenal cortex extracts, skin extracts, muscle extracts, haemopoetic cell line extracts, etc...) or the specific allergens (e.g., pollen), does not reasonably provide enablement for the term "fragments of said autoantigens having the same immunological characteristics as said autoantigen", "derivatives of said autoantigens having the same immunological characteristics as said autoantigens", "fragments of said allergen having the same immunological characteristics as said allergen", or "derivatives of said allergen having the same immunological characteristics as said allergen". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The specification discloses examples of autoantigens (page 10, line 4 thru page 11, line 14). Also, the specification discloses example of specific allergen such as pollen (page 11, line 26). The specification disclosure is based on known antigens specific for the particular autoimmune disorder or known allergen for the particular allergy disorder. However, the specification fails to provide adequate support or guidance how to produce "fragments of said autoantigens having the same immunological characteristics as said autoantigen", "derivatives of said autoantigens having the same immunological characteristics as said autoantigens", "fragments of said allergen having the same immunological characteristics as said allergen", or "derivatives of said allergen having the same immunological characteristics as said allergen" other than specific autoantigens or allergens corresponding the particular autoimmune disorder or allergy condition described in the specification. The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention without undue experimentation. Attention is directed to In re Wands, 8 USPQ 1400 (CAFC 1988) at 1404

(CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing Ex parte Forman, 230 USPQ 546 (BdApls) at 547 the court recited eight factors:

1) the quality of experimentation necessary,

2) the amount of direction or guidance provided,

3) the presence of absence of working example,

4) the nature of the invention,

5) the state of the prior art,

6) the relative skill of those in the art,

7) the predictability of the art, and

8) the breadth of the claims.

Applicants fail to provide information allowing the skilled artisan to ascertain "fragments of said autoantigens having the same immunological characteristics as said autoantigen", "derivatives of said autoantigens having the same immunological characteristics as said autoantigens", "fragments of said allergen having the same immunological characteristics as said allergen", or "derivatives of said allergen having the same immunological characteristics as said allergen" without undue experimentation. In the instant case, no examples of "fragments of said autoantigens having the same immunological characteristics as said autoantigen", "derivatives of said autoantigens having the same immunological characteristics as said autoantigens", "fragments of said allergen having the same immunological characteristics as said allergen" and "derivatives of said allergen having the same immunological characteristics as said allergen" are set forth, thereby failing to provide sufficient working examples. The instant claims read on any

agents having such characteristics in which cannot be readily determined by the skill artisan, necessitating an exhaustive search for the embodiments suitable to practice the claimed invention. Applicants fail to provide information sufficient to practice the claimed invention, absent undue experimentation. Considering the nature of the invention, the state of the prior art, the relative skill of the prior art, the predictability of the prior art, the amount of guidance present in the specification and the breadth of the claims, it would take undue trials and errors to practice the claimed invention.

6. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants have introduced new matters such as "dust, mites, foods, animal danders, and insect venom" in the claim which was not described in the application as filed.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 15-17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Mundy et al. (WO 96/22790).

Mundy teaches pharmaceutical composition, in the form of injectable formulation, comprising bisphosphonates (e.g., etidronate pamidronate, risedronate, pyrophosphate, clodronate, tiludronate, alendronate, BM 21.0955, YM-175, CGP 42446, etc...) and "antigenic fragment" such as PTHrp, TGFα, IL-1α, IL-6, IL-1β, lymphotoxin, TNF, PGE, 1,25-dihydroyx vitamin D3 (page 7, lines 23-27; page 13, lines 1-10; claims 1 and 6-8).

It is noted that applicant's statement of intended use or purpose, for example the treatment of autoimmune disease of allergy, are not limited to the interpretation of composition claim since both referenced composition and the claimed composition are drawn to the same composition, therefore applicant's discovery of a new property fails to confer patentability to an old composition.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyons et al. (GB 2312165 A) in view of Michael et al. (US 6174520 B1).

Claims read on a medicament comprising bisphosphonic acids represented by general formula (I) and an autoantigen or allergen.

Lyons (GB 2312165 A) taches the use of bisphosphonic acids (e.g., ibandronate) for treating chronic immune system activation disorders by an immunomodulaotry action (claim 1, 3, 11 and page 1, lines 5-7).

Michael teaches or suggest the use of antigens (e.g., insulin, thyroid proteins, acetyl choline receptor protein, Type II collagen, myelin basic protein) or allergens (e.g., dust, mites, bee venom, food allergens, animal dander, insect venoms, etc...) as "therapeutic protein (column 1, lines 18-45; column 2, lines 59-67; column 3, lines 33-50) for treating autoimmune diseases or allergies.

The teaching Lyons differs from the claimed invention in the combination use of bisphonic acids in combination with autoantigens or allergens. To incorporate such teaching into the teaching of Lyons, would have been obvious in view of Micahel who teaches or suggests the use of protein antigens (e.g., insulin, thyroid proteins, acetyl choline receptor protein, Type II collagen, myelin basic protein) or allergens (e.g., dust, mites, bee venom, food allergens, animal dander, insect venoms, etc...) as "therapeutic protein (column 1, lines 18-45; column 2, lines 59-67; column 3, lines 33-50) for treating autoimmune diseases or allergies.

Above references in combination make clear that bisphosphonic acids and protein antigens or allergens have been individually used for the treatment of autoimmune diseases. It is obvious to combine two compositions each of which is taught by prior art to be useful for same

purpose; idea of combining them flows logically from their having been individually taught in the prior art. The combination of active ingredient with the same character is merely the additive effect of each individual component. *See In re Kerkhoven, 205 USPQ 1069 (CCPA 1980).*

9. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (US 5208219).

Ogawa discloses that activin may be conjugated to other molecules to increase their water-solubility, increase their half-lives, or enhance their ability to bind to bone. Ogawa lists bisphosphonates (e.g., 1-hydroxyethylidine,1,1-bisphosphonic acid, dichloromethylene bisphosphonic acid, and 3-amino-1-hydroxypropylidene-1-bisphosphonic acid) as a bone-bidning molecules (column 6, lines 34-43).

The teaching of Ogawa differs from the claimed invention in the recitation of specific example of activin and bisphosphonates combination. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to select bisphosphonates (e.g., 1-hydroxyethylidine,1,1-bisphosphonic acid, dichloromethylene bisphosphonic acid, and 3-amino-1-hydroxypropylidene-1-bisphosphonic acid) among other molecules disclosed in Ogawa to formulate activin and bisphosphonate combination. One having ordinary skill in the art would have been motivated to do so such that their water-solubility, half-lives or ability to bind to bone would be greatly enhanced.

## Conclusion

10. No Claim is allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Kwon whose telephone number is (703)308-5377. The examiner can normally be reached Tuesday through Friday from 9:00 am to 7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marianne Seidel, can be reached on (703) 308-4725. The fax number for this Group is (703) 308-4556.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

Brian Kwon

**ZOHREH FAY**
**PRIMARY EXAMINER**
**GROUP 1600**